

REMARKS

Claims 1-6 are pending. By this Amendment, Claim 1 has been amended.
Applicants respectfully submit no new matter is presented herein.

Claim Rejections – 35 U.S.C. §103

Claims 1-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 55-0836361 to Chiaki in view of U.S. Patent No. 6,557,239 to Takahashi et al. (Takahashi). Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiaki in view of Takahashi and further in view of U.S. Patent No. 6,972,499 to Emoto. Although the Office Action indicates it is Claim 5 that is rejected, in view of the stated basis for the rejection, Applicants respectfully submit that it is actually Claim 6 which is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiaki in view of Takahashi and further in view of U.S. Patent No. 6,127,764 to Torok. Applicants respectfully traverse the rejections for the following reason(s).

Claim 1 recites a rotor for a permanent magnet type motor, including a rotor yoke; a permanent magnet connected on a surface of the rotor yoke; and a metal film which is disposed between the rotor yoke and the permanent magnet, wherein the rotor yoke and the permanent magnet are subjected to beam welding only at a microscopic connection interface area located between the permanent magnet and the rotor yoke.

An aspect of the present invention is to securely connect a permanent magnet to a rotor yoke via a metal film, wherein the magnetic property of the magnet may have deteriorated due to heating during the connection process.

Specifically, in the connection between the rotor yoke and permanent magnet, the microscopic connection interface area therebetween is subject to beam welding and includes the brazing effects of the metal film which occur by using the heat generated by the beam welding. As a result of the claimed structural arrangement, the claimed invention attains the technical benefits flowing therefrom, that is, the magnetic characteristics of the permanent magnet recited by Claim 1 do not deteriorate.

Applicants respectfully submit that Chiaki, Takahashi, Emoto and Torok, either alone or in any combination, do not teach or suggest all of the features recited by Claim 1.

Regarding Claim 1, the Office Action asserts that Chiaki discloses a rotor for a permanent magnet type motor, including a rotor yoke; a permanent magnet connected on a surface of the rotor yoke; and a metal film which is disposed between the rotor yoke and the permanent magnet, wherein the rotor yoke and the permanent magnet are subjected to welding (Abstract). However, the Office Action then admits that Chiaki fails to show the method of welding is beam welding.

The Office Action further asserts that Takahashi discloses a motor structure wherein the ends of the conductors are welded by any one of TIG welding, brazing, resistance welding, electron beam welding, laser welding or soldering for the purpose of providing an improved method of manufacturing. The Office Action then asserts that Chiaki and Takahashi are in the same field of endeavor.

Applicants respectfully disagree with the assertions made by the Office Action for the following reasons.

Chiaki discloses connecting a rotor and a permanent magnet by soldering. Since the connection strength achieved by soldering is lower than the connection strength achieved by the welding, soldering is an unsuitable connection technique for motors, which require a high output and a high durability and operate in high heat environments.

Takahashi discloses welding of a stator, but does not disclose connecting a rotor and a permanent magnet. Moreover, Takahashi merely discloses welding of an electrical conductor, and as such, it is unnecessary to consider the influence of heat in such circumstances. Thus, inhibiting of heat generation during welding is not a factor that is considered in using the technique taught by Takahashi.

Chiaki discloses heat compressing welding over a relatively large surface area. However, Chiaki does not disclose beam welding, in any technique, and further does not disclose a microscopic area of connection interface being located between a permanent magnet and a rotor yoke.

The present invention recited by Claim 1 is directed to a rotor. While Chiaki is directed to a rotor, Applicants note that Takahashi is not directed to a rotor since Takahashi merely describes a stator. The differences between rotor and stator connection/welding techniques are not compatible.

Chiaki discloses heat compressing welding that covers a very large surface area that is being corrected. Takahashi simply teaches a type of welding,

but the welding taught by Takahashi relates to welding a stator and not welding of a rotor yoke and a magnet, as recited in the claimed invention.

Put simply, Takahashi does not cure the admitted deficiency of Chiaki and discloses a technique that is not compatible with that which is taught by Chiaki.

Emoto is cited for teaching a motor structure wherein the metal film has a particular nickel composition and therefore does not overcome the above-described deficiencies of Chiaki and Takahashi.

Torok is cited for teaching a motor structure wherein the rotor yoke has a stacked structure and therefore does not overcome the above-described deficiencies of Chiaki, Takahashi and Torok.

§2143.03 of the M.P.E.P. explains that in order to establish *prima facie* obviousness, each and every feature of a rejected claim must be taught or suggested by the prior art of record.

Because Chiaki, Takahashi, Emoto and Torok, alone or in any combination thereof, do not teach or suggest all features of Claim 1, Claim 1 is not obvious in view of the cited references and therefore, Claim 1 should be allowable.

Claims 2-6 depend from Claim 1. It is respectfully submitted that these dependent claims should also be deemed allowable for at least the reasons Claim 1 is allowable as well as for the additional subject matter recited therein.

Applicants request withdrawal of all three rejections.

Conclusion

In view of the above, reconsideration of the application, withdrawal of the rejections, allowance of Claim 1-6, and the prompt issuance of a notice of allowance is respectfully requested.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 108421-00122.**

Respectfully submitted,
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